

CLAIMS:

1. Method for manufacturing an array of semiconductor devices on a substrate (10), each device having a floating gate (36), comprising:
 - first forming isolation zones (14) in the substrate (10),
 - thereafter forming a floating gate separator (32) on the isolation zones (14) at
 - 5 locations where separations between adjacent floating gates (36) are to be formed,
 - after forming the floating gate separator (32), forming the floating gates (36) on the substrate (10) between parts of the floating gate separator (32), and
 - thereafter removing the floating gate separator (32) so as to obtain slits in between neighboring floating gates (36).
- 10 2. Method according to claim 1, furthermore comprising, after forming of the floating gate separator (32) and before forming of the floating gate (36), reducing the dimensions of the floating gate separator (32).
- 15 3. Method according to claim 2, wherein the dimensions of the floating gate separator (32) are reduced to sub-lithographic dimensions.
4. Method according to claim 3, wherein the dimensions of the floating gate separator (32) are reduced to between 100 nm and 40 nm.
- 20 5. Method according to any of claims 2 to 4, wherein the dimensions of the floating gate separator (32) are reduced by resist shrink.
6. Method according to any of claims 2 to 5, wherein the dimensions of the
- 25 floating gate separator (32) are reduced by trim plasma etching.
7. Method according to any of claims 2 to 6, wherein the dimensions of the floating gate separator (32) are reduced by an isotropic over-etch of the floating gate separator (32).

8. Method according to any of claims 2 to 7, wherein the dimensions of the floating gate separator (32) are reduced by phase-shift lithography.

5 9. Method according to any of the previous claims, wherein the floating gate separator (32) comprises nitride material.

10. Method according to any of the previous claims, wherein the floating gate separator (32) comprises at least two layers of different material.

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11. Method according to any of the previous claims, furthermore comprising forming spacers (44) next to the floating gate separator (32) before forming the floating gates (36).

15 12. An array of semiconductor devices with a floating-gate to control-gate coupling ratio, comprising:

- a substrate (10) with a planar surface (12),
 - an isolation zone (14) in the substrate (10) in the planar surface (12),
 - at least two floating gates (36) extending on the substrate (10) in a first
- 20 direction, each floating gate (36) partially overlapping the isolation zone (14) and comprising floating gate material,

- a slit between the two floating gates (36), and
- a control gate (40) extending laterally with respect to the planar surface (12) over the floating gates (36),

25 - wherein at least one of the floating gates (36) is provided with a sharp tip (46) of floating gate material both in the first direction and in a second direction including an angle with the first direction.

13. Array of semiconductor devices according to claim 12, wherein the slit is a
30 sub-lithographically dimensioned slit.

14. Array of semiconductor devices according to any of claims 12 or 13, wherein at least one of the floating gates (36) has a flat top surface.